



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/575,679	04/13/2006	Efraim Garti	27354U	4615
20529	7590	09/14/2011		
THE NATH LAW GROUP 112 South West Street Alexandria, VA 22314			EXAMINER FIGUEROA, JAIME	
			ART UNIT 3664	PAPER NUMBER
			MAIL DATE 09/14/2011	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/575,679	GARTI, EFRAIM	
	Examiner	Art Unit	
	JAIME FIGUEROA	3664	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 June 2011.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on ____; the restriction requirement and election have been incorporated into this action.
- 4) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 5) ☒ Claim(s) 68-88 and 90-95 is/are pending in the application.
- 5a) Of the above claim(s) 84-86,88 and 90-93 is/are withdrawn from consideration.
- 6) ☐ Claim(s) ____ is/are allowed.
- 7) ☒ Claim(s) 68-83,87,94 and 95 is/are rejected.
- 8) ☐ Claim(s) ____ is/are objected to.
- 9) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 10) ☐ The specification is objected to by the Examiner.
- 11) ☒ The drawing(s) filed on 04/13/2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 12) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Receipt is acknowledged of Applicant's arguments / remarks filed on 06/15/2011, claims 68-88 and 90-95 are pending and an action on the merits is as follows.

Applicant's arguments with respect to the rejection of claims 68-95 have been fully considered but are moot in view of the new ground(s) of rejection.

It is noted that applicant has amended claims 68-73, 75-76, 79, 84, 87-88, 90.

It is noted that applicant has cancelled claim 89.

Election/Restrictions

Newly submitted claims 84-86, 88, 90-93 are directed to an invention that is independent or distinct from the invention originally claimed for the following reasons:

The claims are directed to a subcombination type claim versus that of the already examined combination type claims from previous Office action 12/17/2010. If these claims were originally presented they would have been restricted as follows.

Group I, claims 68-83, 87, 94, and 95, drawn to combination of a floating control tail unit tethered to a submerged cleaning body unit, classified in **class 15, subclass 1.7**.

Group II, claims 84-86, 88, 90-93, drawn to a subcombination of a cleaning body with the specifics of the scanning directions and cleaning paths, **classified in class 700, subclass 245**.

Inventions I and II are related as combination and subcombination. Inventions in this relationship are distinct if it can be shown that (1) the combination as claimed does not require the particulars of the subcombination as claimed for patentability, and (2)

Art Unit: 3664

that the subcombination has utility by itself or in other combinations (MPEP § 806.05(c)). In the instant case, the combination as claimed does not require the particulars of the subcombination as claimed because of the specifics of the scanning direction and cleaning paths are omitted. The subcombination has separate utility such as for cleaning robot that operates without the tail unit. See MPEP 806.05 (C) II. A.

Since applicant has received an action on the merits for the originally presented invention of the combination claims, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, **claims 84-86, 88, and 90-93** have been withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

Examiner's Note

Examiner has cited particular paragraphs and/or columns/lines and/or figures in the references as applied to the claims below for the convenience of the applicant. Although the specified citations are representative of the teachings in the art and are applied to the specific limitations within the individual claim, other passages and figures may apply as well. It is respectfully requested from the applicant, in preparing the responses, to fully consider the references in entirety as potentially teaching all or part of the claimed invention, as well as the context of the passage as taught by the prior art or disclosed by the examiner. Applicant is reminded that the Examiner is entitled to give the broadest reasonable interpretation to the language of the claims. Furthermore, the Examiner is not limited to Applicants' definition which is not specifically set forth in the claims. In re Tanaka et al., 193 USPQ 139, (CCPA) 1977.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 68-70, 72-78, 94, and 95 are rejected under 35 U.S.C. 103(a) as being unpatentable over Porat (US 7,089,876) in view of Clementi (EP 1122382A1).

Regarding claim 68 (Currently amended), Porat discloses a *self propelled /automatic* cleaning robot configured to move in a swimming pool in accordance with commands from an *obviously implicit* main controller therein, the robot when in use being free of any cables connected to an external power supply (*see fig. 1 depicting the elements of the claimed system*), and including:

a body unit (*see fig. 1: robotic pool cleaner 100*) configured to move along the floor and/or walls of the pool (*see fig. 1: swimming pool 1*) and having a housing with a battery power pack and said obviously implicit main controller disposed therein (*see fig. 1 depicting a robotic pool cleaner having a housing with a rechargeable battery 102*);

a tail unit (*see fig. 1: electronic platform 10*) comprising a head portion configured to float on the surface of the pool (*see fig. 1, 2 and 4: electronic platform 10*) while the body unit (*robotic pool cleaner 100*) is on the floor of the pool (*see fig. 1*), said head portion comprising *electrical connectors represented by at least input/output connector outlets 50, 52 and 54* (*see fig. 4*) designed for facilitating charging batteries or battery in

Art Unit: 3664

the battery power pack (*rechargeable battery 102*) by an external charger (*see fig. 2: via external charger 4*);

a tethering cable (*see fig. 1: via power cable 90*) attached at least in use, at its one end to said head portion of said tail unit and at its other end to said body unit (*see fig. 1*), said tethering cable being of sufficient length to allow said head portion to float on the surface of the pool while said body unit is on the floor of the pool (*see fig. 1 depicting the claimed connections between the robotic pool cleaner 100 and the electronic platform 10*).

Examiner would like to note that although Porat does not disclose explicitly the presence of a controller, it is at least obvious that the self-propelled cleaning robot of Porat includes a controller in order to perform control functions of the assigned tasks autonomously or automatically, such as cleaning, positioning detection, avoiding collision with the pool walls, cleaning patterns, etc.

Porat discloses substantially said tail unit (electronic platform 10) being in communication with the obviously implicit main controller via the tethering cable (power cable 90), but Porat is silent to disclose a tail controller disposed in said tail unit and the tail controller being electrically connected to said batteries or battery in said battery power pack and being configured to monitor said charging.

However, in the same field of endeavour, Clementi teaches a robotized pool cleaner having a floating device 11 containing *a microcontroller 28, a control unit 31 for the pump, a control unit 32 for the motors, a control unit 34 for inclination signals, and specifically, a control unit 39 having a battery voltage regulator for monitoring battery*

Art Unit: 3664

charge (see fig. 3 depicting all the elements of the floating device 11-being equivalent to the claimed tail unit having a tail controller [0013, 0015, and 0022].

Thus, given the teaching of Clementi, it would have been obvious to a person or ordinary skill in the art at the time of the invention to have readily recognized the desirability and advantages of modifying the robotic pool cleaner of Porat by employing the well known or conventional features of introducing a control unit into the floating platform, as disclosed by Clementi, to monitoring the charging of the battery.

All claimed elements were known in the prior art and one skilled in the art could have combined the elements as claimed by known methods with no change in their respective functions, and the combination would have yielded predictable results to one of ordinary skill in the art at the time the invention was made.

Regarding claims 69 and 70 (Currently amended), Porat in view of Clementi discloses as discussed above in claim 68.

Neither Porat nor Clementi discloses wherein the head portion is configured to submerge below the water surface upon encountering an obstacle; and wherein the head portion is of a geometry which minimizes the likelihood of entanglement thereof with obstacles.

Nevertheless, examiner would like to note that, at very at least, it would have been obvious to one having ordinary skill in the art to see that the floating platform of Porat has waterproof capabilities, and that performing any easy suitable configuration would allow the platform to go under the water level to avoid obstacles and/or cable entanglements, since has been held that doing so involves only routine skill in the art.

Regarding claim 72 (Currently amended), Porat in view of Clementi discloses as discussed above in claim 68.

Porat further discloses wherein the head portion (*electronic platform 10*) comprises a float user interface (*see fig. 4: via several user interface elements such as power input/output, display, solar collectors panels, etc*), and is designed such that the float user interface is disposed at or near the surface of the pool, when the tail unit (*electronic platform 10*) is in its working position (*see particularly fig. 1 and 2: the floating platform being located near the surface of the pool*).

Regarding claim 73 (Currently amended), Porat in view of Clementi discloses as discussed above in claim 68.

Porat further discloses said tethering cable being in communication with the robotic pool cleaner (*see at least fig. 1*), but Porat is silent to disclose wherein the tail unit controller is in communication with the main controller via integrated communications cable in said tethering cable.

However, in the same field of endeavour, Clementi teaches a robotized pool cleaner having a floating device 11 containing *a microcontroller 28, a control unit 31 for the pump, a control unit 32 for the motors, a control unit 34 for inclination signals, and a control unit 39 for monitoring battery charge (see fig. 3 depicting all the elements of the floating device 11-being equivalent to the claimed tail unit having a tail controller) [0006, 0013, 0015, 0022, and 0024]*.

Thus, given the teaching of Clementi, it would have been obvious to a person or ordinary skill in the art at the time of the invention to have readily recognized

Art Unit: 3664

the desirability and advantages of modifying the robotic pool cleaner of Porat by employing the well known or conventional features of introducing a control unit into the floating platform, as disclosed by Clementi, to monitoring and controlling a plurality of elements of the robotic pool cleaner.

All claimed elements were known in the prior art and one skilled in the art could have combined the elements as claimed by known methods with no change in their respective functions, and the combination would have yielded predictable results to one of ordinary skill in the art at the time the invention was made.

Regarding claim 74 (Currently amended), Porat in view of Clementi discloses as discussed above in claim 72.

Porat further discloses wherein the float user interface is configured to receive user input (*see fig. 4: depicting different ways to provide user inputs from the floating platform 10*).

Regarding claim 75 (Currently amended), Porat in view of Clementi discloses as discussed above in claim 68.

Porat further discloses wherein the tail unit further comprises at least one data presentation device (*see fig. 4: via display 34 to provide data presentation*).

Regarding claim 76 (Currently amended), Porat in view of Clementi discloses as discussed above in claim 68.

Porat further discloses the cleaning robot, further comprising an external battery charger (*see fig. 2: via external power supply unit 4*), which is connectable to the tail unit (*electronic platform 10*) for charging at least one battery in the battery power pack

Art Unit: 3664

(rechargeable battery 102) in the body unit of the robot (robotic pool cleaner 100) (see col. 3, lines 54-64).

Examiner would like to note that it is at least obvious (see figures 1, 2, & 4) that the battery from the robot on the bottom of the pool could have been charged by external power supply 4 via cable 92 and then cable 90. Notice the term power input/output for the electrical ports on both the robot and the floating platform. This means that the ports could be configured to provide either power input or power output, to and from the device. Thus, it is clear that power input from an external source could be routed to the robot on the bottom of the pool via floating platform 10.

Regarding claim 77 (Previously presented), Porat in view of Clementi discloses as discussed above in claim 76.

Porat further discloses wherein the charger (*external power supply unit 4*) is configured to communicate with the tail unit (*electronic floating platform 10*) via a cable (*see fig. 2: via cable 92*), and wherein another cable (*see fig. 1: via cable 90*) is used for connecting the tail unit (*electronic floating platform 10*) with the battery power pack.

Examiner would like to note that since cable 90 is an input / output cable and platform 10 also has input /output connections via 50 / 52 / 54, it is obvious (see fig. 1, 2, and 4) that the battery on the bottom of the pool could be recharged from external power supply 4 via platform 10 (see col. 5, line 64 to col. 6, line 2).

Regarding claim 78 (Previously presented), Porat in view of Clementi discloses as discussed above in claim 76.

Porat further discloses wherein the charger comprises at least one charger-side data presentation unit (*see fig. 4: particularly display 34 or LEDs 89 that are obviously capable of providing data-presentation in a way of displaying information or emitting lights*).

Regarding claim 94 (Previously presented), Porat teaches a *self-propelled / automatic* cleaning robot configured to move in a swimming pool in accordance with commands from an *obviously implicit* main controller therein, the robot when in use being free of any cables connected to an external power supply (*see fig.1 depicting the elements of the claimed system*), comprising:

a body unit (*see fig. 1: robotic pool cleaner 100*) with a battery power pack (*see fig. 1: rechargeable battery 102*), configured to move along the floor and/or walls of the pool (*see fig. 1: swimming pool 1*);

a tail unit (*see fig. 1: electronic platform 10*) comprising a head portion configured to float on the surface of the pool (*see fig. 1, 2 and 4: electronic platform 10*) while the body unit (*robotic pool cleaner 100*) is on the floor of the pool (*see fig. 1*);

a tethering cable (*see fig. 1: via power cable 90*) attached at least in use (*see fig. 1*), to the body unit (*see fig. 1: robotic pool cleaner 100*), said tethering cable (*cable 90*) being of sufficient length to allow said head portion (*electronic platform 10*) to float on the surface of the pool while the body unit (*see fig. 1: robotic pool cleaner 100*) is on the floor of the pool (*see fig. 1*).

Examiner would like to note that although Porat does not disclose explicitly the presence of a controller, it is at least obvious that the self-propelled cleaning robot of Porat includes a controller in order to perform control functions of the assigned tasks autonomously or automatically, such as cleaning, positioning detection, avoiding collision with the pool walls, cleaning patterns, etc.

Porat' 876 is silent to disclose specifically said head portion comprising an antenna configured to receive commands from a wireless remote control unit being configured to perform one or more functions being selected from the group consisting of: choosing the mode of cleaning operation of the robot; causing the robot to move in a direction directed by a user and independent of scanning algorithm; predetermining the cycle time; and selecting the length of a pool to be scanned.

However, in the same field of endeavour, Clementi teaches a robotized pool cleaner having a floating device 11 containing an antenna (*see fig. 1 and 3 depicting all the elements of the floating device 11-being equivalent to the claimed tail unit having an aerial antenna 16*) and having a remote control (*see fig. 1 and 3: via small set 22 having a wireless remote control*) [0013, 0016, 0023, and 0024].

Thus, given the teaching of Clementi, it would have been obvious to a person or ordinary skill in the art at the time of the invention to have readily recognized the desirability and advantages of modifying the robotic pool cleaner of Porat by employing the well known or conventional features of introducing an antenna into the floating platform and a wireless remote control unit, as disclosed by Clementi, to

Art Unit: 3664

monitoring and controlling a plurality of task being carried out by the cleaner, the operating cycles, possible paths, size and shape of the pool.

All claimed elements were known in the prior art and one skilled in the art could have combined the elements as claimed by known methods with no change in their respective functions, and the combination would have yielded predictable results to one of ordinary skill in the art at the time the invention was made.

Regarding claim 95 (Previously presented), Porat in view of Clementi discloses as discussed above in claim 94.

Porat further discloses wherein said head portion (*see fig. 1: electronic platform 10*) further comprises *electrical connectors represented by at least input/output connector outlets 50, 52 and 54 (see fig. 4)* designed for facilitating charging batteries or battery in the battery power pack (*rechargeable battery 102*) by an external charger (*see fig. 2: via external charger 4*);

Claim 71 is rejected under 35 U.S.C. 103(a) as being unpatentable over Porat / Clementi in view of Han (US 5,646,494).

Regarding claim 71 (Currently amended), Porat / Clementi discloses as discussed above in claim 68.

Porat' 876 / Clementi is silent to disclose specifically the robot being configured to stop at a predetermined location when a predetermined number of wall encounters occur after the battery voltage drops below a predetermined amount.

Han teaches a charge induction apparatus of robot cleaner being configured to stop at a predetermined location when a predetermined number of wall encounters occur after the battery voltage drops below a predetermined amount (*see col. 9, line 42 to col. 10, line 6*).

Thus, given the teaching of Han, it would have been obvious to a person or ordinary skill in the art at the time of the invention to have readily recognized the desirability and advantages of modifying the robotic pool cleaner of Porat / Clementi by employing the well known or conventional features of introducing a charge induction control, as disclosed by Han, to monitoring and controlling a charge level of the battery when is below predetermined level, therefore, stopping the cleaner at predetermined location (e.g. docking station), and the robot keep traveling and performing the cleaning operation until the robot cleaner is close to the wall surface.

All claimed elements were known in the prior art and one skilled in the art could have combined the elements as claimed by known methods with no change in their respective functions, and the combination would have yielded predictable results to one of ordinary skill in the art at the time the invention was made.

**Claims 79-81 and 87 are rejected under 35 U.S.C. 103(a) as being unpatentable over Porat' 876) / Clementi in view of Porat et al (US 6,842,931)-
hereinafter Porat' 931.**

Regarding claims 79 (Currently amended) and 80 (Previously presented),
Porat' 876 / Clementi discloses as discussed above in claim 68.

Porat' 876 / Clementi is silent to disclose the robot including a memory configured to store a certain orientation of the robot in relation to a fixed direction, the controller being configured to provide the robot with a command to align its orientation in accordance with the stored orientation; and wherein the stored orientation is defined by the robot's initial orientation.

Porat' 931 teaches a submersible pool cleaner including a memory configured to store a certain orientation of the robot in relation to a fixed direction, the controller being configured to provide the robot with a command to align its orientation in accordance with the stored orientation; and wherein the stored orientation is defined by the robot's initial orientation (*see col. 2, lines 1-19; see col. 8, lines 48-63*).

Thus, given the teaching of Porat' 931, it would have been obvious to a person or ordinary skill in the art at the time of the invention to have readily recognized the desirability and advantages of modifying the robotic pool cleaner of Porat' 876 / Clementi by employing the well known or conventional features of introducing a memory/storage device, as disclosed by Porat' 931, to storing programmed movement based upon initial orientation of the cleaner.

All claimed elements were known in the prior art and one skilled in the art could have combined the elements as claimed by known methods with no change in their respective functions, and the combination would have yielded predictable results to one of ordinary skill in the art at the time the invention was made.

Regarding claim 81 (Previously presented), Porat' 876 / Clementi / Porat' 931 in discloses as discussed above in claim 79.

Porat' 876 / Clementi is silent to disclose specifically the cleaning robot that further comprising a detector for detecting a wall when impacted by the robot, wherein the alignment of the robot's orientation is performed after at least one wall detection.

Porat' 931 teaches a submersible pool cleaner further comprising a detector for detecting a wall when impacted by the robot, wherein the alignment of the robot's orientation is performed, after at least one wall detection (*see fig. 6: wall sensor 92*), (*see col. 8, lines 1-20*).

Thus, given the teaching of Porat' 931, it would have been obvious to a person or ordinary skill in the art at the time of the invention to have readily recognized the desirability and advantages of modifying the robotic pool cleaner of Porat' 876 / Clementi by employing the well known or conventional features of introducing capability of detecting the presence of the wall, as disclosed by Porat' 931, to perform the cleaning, reverse movements and turning without collision.

All claimed elements were known in the prior art and one skilled in the art could have combined the elements as claimed by known methods with no change in their respective functions, and the combination would have yielded predictable results to one of ordinary skill in the art at the time the invention was made.

Regarding claim 87 (Currently amended), Porat' 876 / Clementi / Porat' 931 discloses as discussed above in claim 68.

Porat' 876 / Clementi is silent to disclose specifically, wherein the robot is preprogrammed for performing a plurality of cleaning modes, of which at least two are selected from a group comprising: (a) the robot scanning the floor surface of the pool, and ascending a sidewall at predetermined time intervals; (b) the robot having a decreased speed and an increased suction; and (c) the robot executing a cycle comprising ascending a sidewall to the waterline, cleaning the waterline for a predetermined amount of time in a first direction with relation to the pool, descending the sidewall to the floor, moving along the sidewall a predetermined distance in a second direction which is opposite the first direction, ascending the sidewall, and continuing cleaning in the first direction.

Porat' 931 teaches, wherein the robot is preprogrammed for performing a plurality of cleaning modes (*see fig. 1*), of which **at least two** are selected from a group comprising: **(a)** the robot scanning the floor surface of the pool, and ascending a sidewall at predetermined time intervals (*seat least abstract*); (b) the robot having a decreased speed and an increased suction; and **(c)** the robot executing a cycle comprising ascending a sidewall to the waterline, cleaning the waterline for a predetermined amount of time in a first direction with relation to the pool, descending the sidewall to the floor (*see col. 1, lines 43-49*), moving along the sidewall a predetermined distance in a second direction which is opposite the first direction, ascending the sidewall, and continuing cleaning in the first direction (*see fig. 5*).

Thus, given the teaching of Porat' 931, it would have been obvious to a person or ordinary skill in the art at the time of the invention to have readily recognized the desirability and advantages of modifying the robotic pool cleaner of Porat' 876 / Clementi by employing the well known or conventional features of introducing a novel algorithm for scanning pattern, as disclosed by Porat' 931, to thereby maximize the capability of the robotic cleaner to cover the entire bottom surface of the pool to be cleaned, and programmed to direct the cleaner in a particularly efficient pattern of movements.

All claimed elements were known in the prior art and one skilled in the art could have combined the elements as claimed by known methods with no change in their respective functions, and the combination would have yielded predictable results to one of ordinary skill in the art at the time the invention was made.

Claim 82 is rejected under 35 U.S.C. 103(a) as being unpatentable over Porat' 876) / Clementi / Porat' 931 in view of Hadari (US 2004/0260428).

Regarding claim 82 (Previously presented), Porat' 876) / Clementi / Porat' 931 discloses as discussed above in claim 81.

Porat' 876) / Clementi / Porat' 931 is silent to disclose specifically a cleaning robot that further comprising an electro-mechanical drive mean, the first controller being configured to detect the current through the drive means, whereby when the current exceeds a threshold, the controller assumes a wall impact to have occurred.

Hadari teaches a pool cleaning apparatus having a controller being adapted to detect the current through the drive means, whereby when the current exceeds a threshold, the controller assumes a wall impact to have occurred (*see fig. 2*), [0014 and 0015].

Thus, given the teaching of Hadari, it would have been obvious to a person or ordinary skill in the art at the time of the invention to have readily recognized the desirability and advantages of modifying the robotic pool cleaner of Porat' 876 / Clementi / Porat' 931 by employing the well known or conventional features of introducing current monitoring through drive system, as disclosed by Hadari, to thereby improving the effectiveness and maneuverability of a robot for cleaning swimming pools. The modification provides Porat'876 / Clementi / Porat'931 with means for detecting wall obstruction for cleaning robot.

All claimed elements were known in the prior art and one skilled in the art could have combined the elements as claimed by known methods with no change in their respective functions, and the combination would have yielded predictable results to one of ordinary skill in the art at the time the invention was made.

Claim 83 is rejected under 35 U.S.C. 103(a) as being unpatentable over Porat'876 / Clementi / Porat'931 / Hadari in view of Taninaga et al. (US 6,021,361).

Regarding claim 83 (Previously presented), Porat' 876 / Clementi / Porat' 931 / Hadari discloses as discussed above in claim 82.

Art Unit: 3664

Porat' 876 / Clementi / Porat' 931 / Hadari is silent to disclose specifically a cleaning robot wherein the threshold is determined by multiplying an average of the current passing through the drive means during one or more traversing of the pool floor by a constant.

Taninaga et al. teaches a robot control system wherein the threshold is determined by multiplying an average of the current passing through the drive means by a constant (*see at least fig. 1 -3*), (*see at least col.5, line 46 to col. 6, line 48*).

Thus, given the teaching of Taninaga et al., it would have been obvious to a person or ordinary skill in the art at the time of the invention to have readily recognized the desirability and advantages of modifying the robotic pool cleaner of Porat' 876 / Clementi / Porat' 931 / Hadari by employing the well known or conventional features of introducing threshold value for average current, as disclosed by Taninaga et al., to thereby improving the control of the speed of the robot according to the average current detected during different cycles of the operations of the robot.

All claimed elements were known in the prior art and one skilled in the art could have combined the elements as claimed by known methods with no change in their respective functions, and the combination would have yielded predictable results to one of ordinary skill in the art at the time the invention was made.

Response to Arguments

In the Applicant's arguments filed on 06/15/2011, with respect to the rejections of claims 68-95 have been fully considered but are not persuasive.

It is noted that claims 69-73, 75, 76, 79, and 87 have changed their dependency from claim 94 to the independent claim 68.

It is noted that claim 84 is now an independent claim.

Regarding Applicant's argument, the Applicant is kindly invited to consider the new ground of rejection.

Examiner would like to note that references are to be interpreted as by one of ordinary skill in the art rather than as by a novice. See MPEP 2141. Therefore, the relevant inquiry when interpreting a reference is not what the reference expressly discloses on its face but what the reference would teach or suggest to one of ordinary skill in the art.

However, Examiner would like to note that a thought reading of prior art references utilized in the present office action reveals that what is argued is clearly supported. Examiner has made a broadest reasonable interpretation of the claim language; hence the references meet the claimed limitations. Furthermore, Examiner notes that, at very at least, it would have been obvious to one having ordinary skill in the art to see that the robot pool cleaner of Porat and its modifications is obviously capable of being utilized for the claimed invention since it anticipates all structural limitations.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JAIME FIGUEROA whose telephone number is (571)270-7620. The examiner can normally be reached on Monday-Friday, 9:00 am to 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Khoi H. Tran can be reached on 571-272-6919. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published

Art Unit: 3664

applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/JAIME FIGUEROA/

Examiner, Art Unit 3664

/KHOI TRAN/

Supervisory Patent Examiner, Art Unit 3664